

U.S. Serial No. 09/818,210  
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Amendment

Claim 1) (Currently Amended) A plurality of ~~unleaded fuels boiling in the gasoline range~~ comprising:

at least a first unleaded fuel and a second unleaded fuel, each boiling in the gasoline range and operable in a spark ignition, internal combustion engine having a compression ratio, CR, of 11 or more,

the first fuel being a mixture of hydrocarbons with greater than 45 vol% aromatics and having a research octane number, RON, greater than 100, and at high load conditions an average burn rate greater than 105% of isooctane and a laminar flame speed greater than 105% of isooctane;

the second fuel being a mixture of hydrocarbons having a research octane number, RON, less than 90, and at low load conditions a burn rate greater than 105% of isooctane and a laminar flame speed greater than 105% of isooctane and containing less than 45 vol% aromatics.

Claim 2) (Cancelled)

Claim 3) (Cancelled)

Claim 4) (Currently Amended) The fuels of claim ~~3~~ 1 including at least a third fuel having a research octane number, RON, between those of the first and second fuel, and at medium load conditions a burn rate greater than 105% of isooctane and a laminar flame speed greater than 105% of isooctane.

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Claim 5) (Original) The fuels of claim 4 wherein the third fuel is admixed from the first and second fuel.

Claim 6) (Previously Presented) The fuels of claim 5 wherein the admixture functions to allow engine operation at or about minimum spark advance for best torque, MBT.

Claim 7) (Previously Presented) The fuels of claim 4 wherein the third fuel functions to allow engine operation at or about minimum spark advance for best torque, MBT.

Claim 8) (Currently Amended) At least two unleaded fuel compositions boiling in the gasoline range comprising: at least a first fuel and a second fuel operable in a spark ignition, internal combustion engine having a compression ratio of 11 or more, the first fuel having a research octane ratio, RON, greater than 100, a flame speed greater than 105% of isooctane and at high load conditions an average burn rate greater than 105% of isooctane and greater than 45 vol. aromatics, the second fuel having a research octane ratio, RON, less than 90 and aromatics less than the first fuel and a laminar flame speed 105% of isooctane and at low load conditions an average burn rate greater than 105% of isooctane.

Claim 9) (Previously Presented) The fuel compositions of claim 8 wherein said first fuel has greater than about 55 vol% aromatics.

Claim 10) (Previously Presented) The fuel composition of claim 9 wherein said first fuel has about 60 vol% aromatics.

Claim 11) (Cancelled)

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Claim 12) (Currently Amended) The fuel composition of claim ~~11~~ 1 wherein the concentration of sulfur in the second fuel is lower than the concentration of sulfur in the first fuel.

Claims 13 to 46) (Cancelled)

Claim 47) (New) The fuels of claim 1 wherein the second fuel has less than about 20 vol% aromatics.